

WHAT IS CLAIMED IS:

1. A cap device for a bottle, said cap device comprising:

a cap body tightened to an externally threaded mouth of said bottle;

5 a funnel part integrally having an open lower end formed in the cap body;

a cap cover assembled with the cap body to cover an open upper end of the cap body while defining a cavity inside both the cap body and the cap cover to contain an additive in said cavity;and,

10 a valve means for opening or closing the lower end of the funnel part of the cap body in accordance with a rotating action of the cap body relative to the externally threaded mouth of the bottle.

2. The cap device for a bottle according to Claim 1

wherein the valve means comprises a valve member, said valve member comprising:

15 a conical valve part for opening and closing the lower end of the funnel part;

a plurality of radial ribs extending outward from an external surface of the conical valve part in radial directions; and

a ring integrated with outside ends of the radial ribs so as to be supported on an inner surface of a neck of the bottle.

20

3. The cap device for a bottle according to claim 1, further comprising:

sealing means provided at a junction between the valve member and the lower end of the funnel part of the cap body, thus accomplishing a sealing effect at the junction.

5 4. The cap device for a bottle according to claim 3, wherein the sealing means comprises:

a plugging shank extending upward from a valve holder of the conical valve part;

internal threading formed on the lower end of the funnel part; and,

an external threading formed around the plugging shank such that the external threading of the plugging shank has the same pitch as said internal threading of the lower end of the funnel part.

10

5. The cap device for a bottle as described in claim 4 further comprising an engaging part formed on an internal surface of the lower end of the funnel part so as to engage with the external threading of the plugging shank.

15 6. In a bottle having a neck and an externally threaded mouth, said bottle comprising:

a cap body tightened to said externally threaded mouth of said bottle;

a funnel part integrally having an open lower end formed in the cap body;

a cap cover assembled with the cap body to cover an open upper end of the cap body while defining a cavity inside both the cap body and the cap cover to contain an additive in said

20 cavity; and,

a valve means for opening or closing the lower end of the funnel part of the cap body in

accordance with a rotating action of the cap body relative to the externally threaded mouth of the bottle.

7. The bottle according to Claim 6

5 wherein the valve means comprises a valve member, said valve member comprising:
 a conical valve part for opening and closing the lower end of the funnel part;
 a plurality of radial ribs extending outward from an external surface of the conical valve
part in radial directions; and
 a ring integrated with outside ends of the radial ribs so as to be supported on an inner
10 surface of said neck of the bottle.

8. The bottle according to claim 6, further comprising:

 sealing means provided at a junction between the valve member and the lower end of the
funnel part of the cap body, thus accomplishing a sealing effect at the junction.

15

9. The bottle according to claim 8, wherein the sealing means comprises:

 a plugging shank extending upward from a valve holder of the conical valve part;
 internal threading formed on the lower end of the funnel part; and,
 an external threading formed around the plugging shank such that the external threading of
20 the plugging shank has the same pitch as said internal threading of the lower end of the funnel part.

10. The bottle as described in claim 9 further comprising an engaging part formed on an internal surface of the lower end of the funnel part so as to engage with the external threading of the plugging shank.